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Journal of the Society of Arts.

FRIDAY, NOVEMBER 9, 1855.

FREE LIBRARY FOR LONDON REJECTED.

(From the *Morning Post*.)

On Monday a public meeting of the ratepayers of the City, convened by the Lord Mayor, in obedience to a vote of the Court of Common Council, was held in the Egyptian Hall, Mansion House, to decide if they would avail themselves of the benefits of the Public Libraries Act.

His LORDSHIP, on taking the chair, said that there were few subjects on which he could call them together to deliberate with more entire satisfaction to himself than on that of establishing a free library, open to all, in which his fellow-citizens might avail themselves of the intellectual labours of those gifted with genius and learning for their own improvement. To convene a meeting for such a purpose was doubly gratifying to him in his municipal capacity, as it so contrasted with the ordinary duties of officers like himself, a considerable portion of which were devoted to the punishment of crime. His lordship then explained the provisions of Mr. Ewart's Act, and the maximum extent of rating which it sanctioned, and informed the meeting that that rating could not be imposed unless a clear majority of two-thirds of the present meeting agreed to it. He had himself no particular feeling with respect to the matter, but he wished them clearly to understand that the adoption or rejection of the measure would be their own act.

Mr. Sergeant MEREWETHER having read the clauses of the Act as applicable to the City of London, stated that all the preliminaries of the meeting had been legally complied with.

Mr. EWART, M.P., in proposing the first resolution, to the effect that the meeting, convinced of the great moral and social advantages of education, hailed with satisfaction the opportunity of establishing in the City of London a free library and museum, open to all classes of the community, stated that there were already two free libraries in Manchester, one for Manchester properly so called, and the other in Salford. In Liverpool, too, the inhabitants had lately raised £12,000 for the purpose of erecting a new building for the accommodation of their free library. In addition to that £12,000, one of the inhabitants of the town (Mr. Wm. Brown, M.P.) had contributed £6,000 towards the purchase of books. The building at present used as the library was formerly a Socialist hall, in which were promulgated doctrines opposed to good order, and in nowise congenial with the interests of learning. He might add that, of the £12,000 originally subscribed for the purchase of the building, as much as £800 had been contributed by working men. It was not, however, in Manchester and Liverpool only that the experiment had been tried with success, for in the small town of Hertford the ratepayers had unanimously resolved to establish a free library. On the Continent, there was scarcely a town of 3,000 inhabitants which had not its free library. Every such institution established in this country, independent of the other advantages which it would afford, would become the nucleus of a mass of topographical knowledge for the use of future Macaulays. In Liverpool and Manchester there were lending libraries in connection with the free libraries, and he found, by the report of the librarians, that out of 110,000 volumes lent out to the people to read, only one volume had been lost. The use of books would teach the people to reverence books, and would raise their intelligence. Indeed, as it was, the people were most careful of the books lent to them, and in taking them from the lending libraries covered them with cloth as a protection. In the free libraries the rich would meet with the poor, the native with the foreigner, and their inter-

course would naturally break down those barriers which at present prevented them from fully appreciating each other; it would, too, lessen the rancour of religious discussions, as all would see that they were met on common ground for a common object, the good of the community. In conclusion, he would rest the approval of the act upon the intelligence of the City of London, and should they reject it, he should look upon their doing so with feelings of astonishment.

A person in the meeting desired to know if Mr. Ewart was a ratepayer. (Great confusion.)

The LORD MAYOR replied in the negative, but added that as none but ratepayers would be allowed to vote on the motion, it was immaterial who proposed it.

Col. SYKES seconded the proposition, and said he was astonished that the subject had not been taken up before in the City. The expense would be trifling, for although the maximum limit of the rate was a penny in the pound; yet in actual practice it would not amount to the ghost of a farthing in the pound; and he hoped that, for the honour of the City, they would consent to tax themselves to that extent. In Munich they had 17 libraries free to the public; in London there were only 22 volumes available for every 100 of the inhabitants. In Paris, the proportion was 162 to every 100; in Berlin, 182; in Florence, 317—(cries of "It does them much good," and "The Madai into the bargain")—and in Copenhagen, 460. Having thus placed before them the relative accommodation in books which the inhabitants of the principal cities of Europe enjoyed, he would conclude by stating his fullest concurrence in the remarks of Mr. Ewart upon the usefulness of lending libraries.

Mr. COX wished to know if there were not a free library already existing in the City?

The LORD MAYOR—No.

[Here a scene of indescribable confusion took place, seven or eight gentlemen, each of stentorian lungs, attempting simultaneously to address the meeting.]

Mr. Deputy PEACOCK, on the ground that the present taxation was oppressive, and the consolidated rate in debt to the extent of £90,000, moved, as an amendment, that the resolution be not put for approval.

Mr. COX seconded the amendment, and explained that he had supported the proposition when brought before the Common Council, because he wished that such a voice should proceed from the present meeting as would show to the corporation the necessity of extending the usefulness of the library in Guildhall.

Mr. Deputy BOWYER supported the amendment, as there were already 35 libraries and 27 museums for the use of the people in the metropolis. He instanced, too, the failure of the London Institution, the Aldersgate Institution, and the Birkbeck Mechanics' Institution, to show that there was not a reading public in London during the evenings, as those employed in the City for the most part slept in the country.

Mr. ABRAMS, amidst loud cries of "Divide, divide," supported the original resolution.

The Rev. Mr. MACKENZIE, for the honour of the City, and for the benefit of the young men employed in it, who, he contended, did not reside in the country, also supported the original motion, and remarked that the institutions referred to by Mr. Deputy Bowyer had failed because they had not been free.

After some observations from Dr. SPARKE and Mr. DODD, which were almost inaudible,

Mr. TITE said that there was no doubt of the motion being rejected, and he considered its introduction ill-timed. He wished it, however, to be understood that the rejection took place on account of the pressure of the times, and not from any opposition to the principle of free libraries. He thought that the required library might be established by private subscription.

Mr. MECCHI maintained that the cost of the library would be no burden to the poor, as it would be borne almost entirely by the large wholesale houses.

Alderman SIDNEY condemned the whole movement, as founded on a spurious liberality, which pretended to provide for the working-classes, who perfectly well knew their own business.

After a few words from Mr. BENNOCH in support of the motion,

The LORD MAYOR put the amendment to a show of hands, and declared it carried by a large majority.

Loud cheering followed the announcement.

On the motion of Mr. TITE, M.P., seconded by Alderman FINNIS, a vote of thanks was passed to his lordship for his conduct in the chair, and the proceedings terminated.

SALFORD BOROUGH ROYAL MUSEUM AND LIBRARY.

The seventh report of the Executive Committee states that "it is most gratifying to them to find that the demand for useful knowledge by the artisans, mechanics, and other operatives, who have so largely availed themselves of the benefits of the Library and Museum, has, during the six years of its existence, continued steadily to increase, thus proving to demonstration the desirableness of establishing free public libraries, and especially in populous districts.

"The number of volumes issued in the Reference Library in the past year is 73,780, and in the Lending Library, 34,822, making an aggregate of 108,602 volumes delivered to readers, thus showing that nearly one-third part of the books are taken to the dwellings of the applicants for careful reading and study.

"The Executive Committee, finding the usefulness of the Lending Library gradually extending, and the circulation rapidly increasing, have added by purchase during the past year about 1,800 volumes of carefully selected books, and the Lending Library now consists of nearly 5,000 volumes. The Reference Library has likewise been augmented by donations and by purchase to the extent of 1,200 volumes, of which 1,043 volumes have been by donation, making an addition of 3,150 volumes in the year.

"The Committee have again to acknowledge the great liberality of E. R. Langworthy, Esq., by whose contributions the whole of the funds available for purchasing books and specimens during the past year has been supplied."

The report then refers "to the orderly demeanour of the many thousands who have visited the Institution, and the care which is taken by them of the books, especially those in the lending department, which are almost invariably returned without damage or injury."

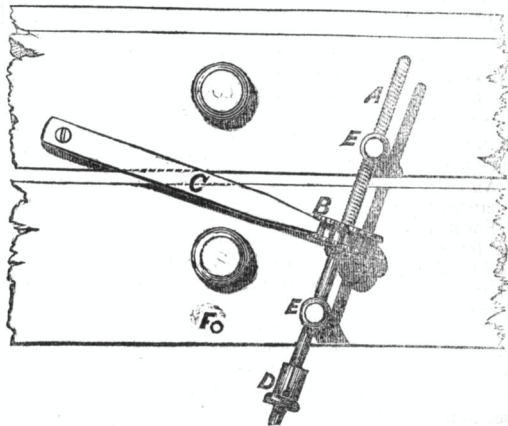
Some very valuable donations have been made to the Library and Museum, including a copy of the Grants and Specifications of the Letters Patent for Inventions, which have been bound, and comprise nearly 800 volumes. Specimens in natural history of considerable value and interest have been this year added to the Museum, and also many mechanical models, presented by Mr. Richard Roberts, C.E.

The statistical returns compiled by Mr. Plant, the curator, show the gradual appreciation by the working classes of the advantages offered to them by the Library; and also "a marked improvement in the class or character of the literature sought after by them; thus establishing the fact, that, as the desire for reading progresses, the reader is led on to seek for works of a more useful and elevating kind; or in other words, that literature of a light or pleasing kind eventually gives place to history, science, and general literature. These returns also show that the Library is used almost exclusively by the operative classes, and especially by young men, the number issued to readers under 21 years of age greatly preponderating over those read by persons of more mature years, a fact which is most encouraging to the promoters of free libraries."

A NEW PARALLEL AND RADIAL RULE.

By E. T. LOSEBY.

The accompanying engraving represents the middle of the rule, containing the improved portions; the ends being of the ordinary construction, they are omitted.



A is a straight steel wire, made into a screw at one end, on which is fixed a nut, B, milled on the edges and divided into ten notched divisions, which admit the end of the steel spring, C, and prevent the screw being accidentally moved; the spring is made to travel with the screw, by its acting in a groove sunk in the nut; D, a clamp, milled on the edge, which is slit to make it move tightly and evenly along the wire; the audible sound which the spring makes in falling into the notches enables them to be counted by ear to relieve the eye; whole turns are counted by a mark placed on the nut, and every tenth turn by a notch in the wire. E E, two studs, screwed into the rule, in one of which the screw works and the other forms a stop, which, limiting the range of the clamp, D, regulates the distance the rule opens; the holes in the studs are a little elongated horizontally, to allow of the wire accommodating itself to the motion of the rule; the wire being placed at the best angle with the joint arms for reducing the motion to the lowest amount.

The screw should be of the proper pitch to open the rule $\frac{1}{10}$ of an inch each revolution, which it would do with 100 turns to the inch if placed at a right angle with the rule, but as the proper angle is rather less, the screw requires to be proportionably coarser, in order that each division on the nut may be equal to $\frac{1}{1000}$ of an inch, each turn to $\frac{1}{100}$, and each notch on the wire to $\frac{1}{10}$.

In setting the rule to open accurately a particular distance, the nut, B, is screwed forward close to the screw-stud, and the clamp, D, pressed along the wire to the stop-stud, so as to keep the rule quite close without it being strained. The marked division on the nut should now be uppermost, and the clamp at the zero notch on the wire; the nut is then unscrewed the requisite number of turns and parts of a turn, to accord with the number of tenths, hundredths, and thousandths of an inch required. For less accurate purposes, the clamp may be set to the proper division on the wire by the eye, without it being screwed home, the object of which is to ensure perfect contact of the bearings.

The rule is converted from a parallel to a radial rule by a point placed at F, and a small hole, not shown in the drawing, drilled in the line of the line of the straight-edge at the end towards the left hand, through which, and the centre of the circle to be divided, a pin is driven into the drawing-board; the rule being then opened and closed in the ordinary way by a finger placed on each of the studs, it is constrained by the points to move round in a circle.

One of the finger-studs is made to serve for the point by screwing it into the hole, F, and the rule being thinner to-

wards the edge, it allows the point to project sufficiently there without projecting when placed in the other hole for drawing parallel lines; the studs are milled on the edge to facilitate their being unscrewed with the fingers.

The different parts should be so proportioned and arranged that when the back point is placed at F, so as to be convenient for the fingers, the two points will remain at the same distance from each other, and simply revolve whilst the rule is being opened and closed, and that ten turns of the screw will be equal to 1°. Both these conditions can be fulfilled if the proper size and position of the following parts are observed, viz.,—the distance between the two points, and the distance of F from the straight-edge; the length of the joint-arms from centre to centre, and the angle they are placed at on the rule.

Amongst the uses of the rule the following may be mentioned:—

For drawing any number of lines at equal distances—as, for example, those in sectional drawing, shading, flights of steps, screw threads, laying on a tint of equal lines similar to engravers' machine-ruling, ruling paper for tables, writing, &c.

For drawing lines at increasing or diminishing distances—as, for instance, giving the position, without individual measurement, of doors, windows, columns, &c., in a range of buildings seen in perspective; the position of wheel-teeth seen edgeways, &c.

For graduating straight scales of divisions either at equal distances, as those of thermometers, &c., or at accumulating distances, as those of hydrometers.

For drawing radial lines round a circle, either at equal distances or at increasing or diminishing distances.

For dividing circular scales into equal or accumulating spaces, laying down angles, &c.

A gauge for short distances, giving micrometer measurements.

It would add to the security of the rule in drawing parallel lines if four pointed screws, similar to the one used at F, were placed at the corners to diminish the risk of its slipping; but for very accurate work, such as engravers', this may be more effectually done by fixing the back of the rule to the drawing-table frame, or board with pins, reversing the clamp, D, and placing it to act on the other side of the stop-stud, and working the front half of the rule by the screw alone. This arrangement will allow a tool to be pressed against the straight-edge with sufficient force for engraving wood blocks or steel plates.

One or two other things remain to be noticed which apply to ordinary rules as well as to those above described. First, they should have discs of thin metal between the joint arms and the rule, to prevent any rubbing at a distance from the rivets. Secondly, the straight-edge should be of steel, hardened and tempered to resist the action of tools drawn along it; the steel which is cheaply prepared for ladies' stays answers very well; it may be fixed by being cemented into a groove in the rule. Thirdly, the rule, instead of being flat on the under side, as they are usually made, should be slightly bevelled towards both edges, so as to divide the width into three equal bearings; this effects two objects, one of which is to make the rule easier to work and less liable to shift accidentally, as when one side is pressed down it raises the other, and keeps it quite free whilst it is being moved; the other object is to enable the same straight-edge to be raised different distances from the paper whilst drawing the lines by pressing down the front, middle, or back, of the rule.

As several years have elapsed since the construction was completed and arranged in the present form, after several others that occurred to me had been tried, and as improvements in mathematical instruments very seldom repay the heavy cost of a patent, the construction is now open for any one to manufacture, but in order to afford further facility for its being properly carried out, I have furnished detailed instructions to the principal mathema-

tical instrument makers, who are making arrangements for supplying the improved rules to the public; having done thus much in the matter and occupied several months with the rule at different times, it must rest with them whether it is perfectly manufactured or not.

TANNING SAILS.

Fishermen *tan* their sails to render them more durable; but does the benefit of this practice arise from the preservative quality of gallic acid, or from some other cause? This being a question of much importance, the late Sir Samuel Bentham determined to investigate the matter. He procured a piece of linen, had it thoroughly washed, to free it from the starch used in weaving, then had it made into half-a-dozen pair of drawers. The *right* legs of half of them were *tanned* and the *left* legs of the other three pair, the other legs being left in their original state. All the drawers were worn till ragged, and no difference could be discerned between the tanned and untanned halves.

The results of this very simple experiment were important. Sir Samuel had all along conceived that the beneficial practice of tanning sails depended, not on the impregnating them with gallic acid, but on the paste being by this process either decomposed, or washed out; therefore in the year 1803, during a visit to many of our principal manufacturing establishments, he endeavoured to find master weavers of sail-cloth who would furnish Government with sail-cloth woven *without* starch, but failed till he arrived at Castle Eden. It was contrary to the interest of weavers to so weave sail-cloth, for besides the additional trouble of weaving without it, "five or six pounds of starch making a difference of 10 per cent.," is much cheaper weight for weight than yarn, and two or three pounds of starch or often more remained in a piece of sail cloth. At length, at Castle Eden, it appeared that by that company's peculiar mode of placing the yarn in the loom, namely, in a contrary direction to that in which it was spun, there was little difficulty in beating up the weft. Mr. Scarth, the acting manager of the company, undertook to furnish some pieces of sail-cloth woven entirely *without* starch, and on the 13th of April, 1804, the General proposed that a trial should be made of the Castle Eden sail-cloth thus woven. Whether sail-cloth be now woven with or without starch is not known. I have been told that of late sail-cloth is boiled; if a sufficiency of water be used, the starch will be got rid of, but a single boiling can scarcely suffice, especially when the quantity of water is not very abundant.

Much has been said and written about the adulteration of food, whilst that of manufactures is scarcely noticed; for instance, excepting in Sir Samuel's papers, it does not seem that the substitution of cheap starch to high-priced flax has been brought to notice.

There is another common practice that deteriorates sail-cloth, namely, that of using lime for bleaching it, instead of pearl-ash or soda, and the mischief is so much the greater that it cannot be discovered when the article is fabricated.

M. S. BENTHAM.

Home Correspondence.

DECIMAL COINAGE.

SIR,—Having been absent from London during the greater part of the last month, I did not see Mr. Theodore Rathbone's letter, inserted in your number of the 12th instant, until this morning. It would be too tedious, and would only serve to weary your readers, to go through a detailed comparison of the letter with his original communication, on the subject of a decimal coinage, in the *Athenaeum* of the 3rd of September, 1853. Although it

would be easy to show how widely they differ in many respects, this exposition would, however, be much more simply and completely effected by a reprint of Mr. Theodore Rathbone's communication in the *Athenæum*, which would fully justify all I have said in relation to it. I would ask for no better proof of all that I have advanced, and I therefore earnestly request that you will afford your readers the opportunity of judging for themselves which of us has correctly or incorrectly represented its contents. If you should think proper to comply with this request, I will gladly forego all comments upon the letter, leaving it to tell its own tale.

I am, Sir, your obedient servant,
JOHN EDW. GRAY.

British Museum, 30th October, 1855.

"DECIMAL COINAGE."

"Everyone who has reflected on the subject must have observed with unmixed feelings of satisfaction the general conclusions of the Committee of the House of Commons appointed to take in consideration and report on the practicability and advantages, or otherwise, of adopting the Decimal system of coinage in this country—the unanimous, unequivocal opinions of almost all the various witnesses examined, and the general urgent demand for some prompt and decisive action. Before it is too late, I would, however, beg to be allowed to call attention through your columns to one most important view and mode of proceeding which has not yet I think been sufficiently taken into consideration; although we might thus, with very slight modification of the propositions of the Committee and no practical sacrifice whatever of their advantages, but on the contrary with much less disturbance of existing arrangements, secure the almost inestimable *additional* advantage of a clear, intelligible, *universal monetary system*,—already sufficiently in existence for the purpose in a great portion of the civilized world, and certain, if taken up by this country, to extend itself universally.

"I quite agree with the Committee, that this country has kept accounts too long in and is too widely bound up with *pounds sterling*, represented by the sovereign, to allow of its being either reasonable or practicable to give up this great denomination in our accounts and our coinage. On the other hand, France has now extended over the Continent far too widely to be ever abandoned that beautifully simple, admirable system of francs and Napoleons,—the delight of every Continental traveller, and equally the source of his grief and regret when passing on into the varieties and perplexities of absurd coins and accounts, changing (literally with railway speed) from hour to hour, which still disgrace some parts of Europe. *Instead, then, of the entirely new coinage and designation of mils and their multiples, up to the thousand making a sovereign*, proposed by the Committee,—would it not be wiser to sacrifice a little of theoretic nominal perfection for the far more simply and easily obtained, and surely greatest of all possible practical advantages arising out of the following plan of proceeding! Let it be assumed that the *European franc will ultimately become the universal unit in all accounts, and let all coins whatever be multiples or definite portions of the franc, with the exact number and proportion which they represent distinctly expressed upon them in all cases*; and for the present let the amounts of the various coins in use, and to be kept in circulation in different countries, and the exact mode of keeping accounts, be left, *subject to this one condition*, to be settled in each of them as circumstances shall determine. In this country, for instance, in place of the half-dozen new mil coins, wholly without correspondence with anything now in existence, proposed by the Committee, and the banishment of all the old figures but the pound sterling from our accounts, we should have little to do but to substitute an issue of francs for our shillings, to stamp our sovereigns with the number 25, our crowns as 6, and our half-crowns as 3-franc pieces,—and we might still keep our accounts in pounds,

francs and pence (or double sous), instead of our present pounds, *shillings*, and pence. If a foreigner hears of £1000 sterling he then is at once aware that 25,000 francs is the sum indicated, and if he enters England laden with his rouleaus of 5-franc pieces he knows at once that five of them make up the current gold coin of the country. When the alarming amounts of francs with which an Englishman is sometimes perplexed are named, a division by 25 at once turns the milliards into pounds sterling; and when he leaves his own country there can be equally little difficulty or question as to the exact standard exchangeable value everywhere of his native sovereign with its indicative number 25. All that would be necessary to render this simple, self-evidently useful plan general and comprehensive, would be, for England and France by negotiation to induce other countries, as widely and generally as possible, to enact that *their* coinage and accounts should hereafter be *some* multiple of the franc,—*the tenpenny, or twenty-sou piece*,—and that *no coin* should hereafter circulate without the exact multiple or decimal part of the franc which it represented being distinctly impressed upon its surface. If the United States of America, for instance, still chose to have their accounts kept in dollars and cents,—to bring even them into the arrangement it would be only necessary that they should make their future dollar an exact 4 or 5-franc piece, and their cent a sou:—involving a scarcely perceptible change in their present monetary system. How long, in short, *could* any but a land of savages, cut off from all intercourse with the civilised world, resist the overwhelming social and commercial advantages to be secured on terms such as these!

"I must not occupy more of your valuable space with details; and indeed, it is sufficiently obvious to render them unnecessary, that the plan now proposed would work far better in practice—be far less injurious and repulsive, particularly to the poorer and less educated classes, besides its other still more important public and national advantages—than that proposed by the Committee of the House of Commons. The penny postage, tolls of every kind, and all cases in which pennies and halfpennies are concerned, are admitted by the Committee to offer serious and very embarrassing difficulties in the carrying out of their plan,—as these important denominations and coins would no longer exist, and would be replaced by nothing at all corresponding with them. In the first case, for instance, that of postage, the proposed new 5-mil coin would add, it appears, 20 *per cent.* to our rate of postage,—to which Mr. Rowland Hill, on the part of the public, naturally entertains a most decided objection;—whilst the next denomination in the new proposed coinage (the mil coin) would cause a loss of £100,000 a year to the revenue,—which the Chancellor of the Exchequer would, no doubt, equally dislike. Not only would the double sou, or English penny, meet all these difficulties,—but the poor bewildered rustic, instead of all these new mil coins, would still find in the single and double sou pieces his old familiar pence and half-pence. The only necessary practical change of any moment in this country would, in short, be that from shillings to pence; and here the broad, clear, distinction *between twelve pence and ten pence* would put every one on his guard;—and the fact that three francs would constitute the well-known English half crown, must render this change intelligible to the most limited mental capacity that ever existed. We should pass from our present state of isolation and admitted barbarism in accounts and currency to a universal and universally intelligible circulating medium and standard of comparison in every description of statement—commercial and statistical:—and this *not* by means of the proposed half-dozen of altogether new unheard-of mil coins, still without correspondence with those of any other country,—but by means of the alteration of little more than a single one of our existing forms of money, and scarcely any in the present form of our accounts.

"P.S.—Since writing the above, a number of able letters and comments on the plan of decimal coinage proposed by the Committee of the House of Commons have appeared in the newspapers,—all, almost without an exception so far as I know, warm in their approbation of the Decimal system, but objecting to the form in which the Committee propose to carry it out in practice. The injustice, injurious consequences, and almost absolute impracticability of this plan are in particular pointed out with great ability and knowledge of the subject in a long letter, signed J. E. G., in the *Times* of Tuesday last. As this letter contains the only approach to a suggestion of any other and more practicable scheme than that of the Committee, I would just observe that the great conclusions at which this writer arrives—viz., 'that no decimal system of coinage will be just and practicable which does not retain the penny as one of its essential elements'—is entirely in harmony with the scheme which I have proposed. Both in our coinage and as a denomination in our accounts, the penny, or two sou piece, the tenth of the franc or livre (*the unit in far the most widely extended and perfect decimal system in existence*), would retain the position claimed for it, on grounds, it appears to me, altogether irresistible.

"T. W. R."

EDUCATION AND PHYSICAL TRAINING OF WOMEN.

1, Adam-street, Adelphi, Oct. 29, 1855.

SIR,—That the English race generally has not deteriorated, seems tolerably clear from the war in the Crimea. The nation of least civilisation, Russia, has succumbed in corporeal contest to the most civilised, England and France. So far, therefore, civilisation has not deteriorated corporeal humanity in our fighting men.

Nor has there been any sign of want of courage among the higher classes composing the officers of the English army, so far as regards stroke and flash, in the ranks of battle. But if reports may be relied on, there has been less of that courage which enables men to bear hardships and privation. Those who could dare "the imminent deadly breach," might be found faltering in the imminent deadly trenches. It would be a useful piece of statistics to know who they were who sought leave of absence—not their names—but the physical class of men, whether they were men distinguished as boaters, cricketers, shooters, hunters, yachters, swimmers, and general practisers of what are called "manly sports," or whether they were sybarites, men about town, living in luxuries, and with damaged constitutions, having the mere courage to stand and be shot at, without the physical energy requisite to bear hardships; or whether they were men suffering for the sins of their progenitors, badly born, unmasculine, nerveless and not nervous, diseased from birth, etiolated, and prepared for paralysis from lack of a healthy current of life in the channels of their blood?

Probably no finer specimens of the human creature exist than are to be found in the ranks of our aristocracy. Why should it be otherwise? Without care or anxiety, fed on wholesome food, trained to gymnastic exercises, provided with teachers of all accomplishments, with mental cultivation for all their aptitudes, with a stimulating climate second to none in the world, and power of locomotion to all kinds of natural beauty and scenery,—if they happen only to be well born, *i.e.* born of a man, and more especially of a woman, in the full sense of the term, viz., the combination of physical and mental excellence, and with all deteriorating circumstances removed, there is no reason why the Greek Apollo and the Greek Minerva should not exist in England in living perfection, and with the Christian spirit superadded. From time to time we see close approximations to this in what we call the aristocracy; and in such cases, really and truly the aristocracy; and in the children of the poor we also see at intervals faces and forms such as Murillo loved to paint, but

which we know will be shorn of their due development by the pressure of painful circumstances.

Those who have watched the people of England as a collection of human beings, have become painfully aware that during the present century there has been growing up amongst us a large and increasing class, remarkable for intellectual acuteness and physical debility. They are not confined to one race or class, but are found in all,—noble, middle-class, and poor. In some portions of the nobility inbreeding, marrying cousins, and the debauchery of past years, have increased the debility more than the intellect. In the poorer classes, an unhealthy mill system—unhealthy from ignorance—has etiolated their vitality, and quickened uncultivated intellect into cunning. But it is in the middle classes that the acutest intellect is developed in unhealthy frames. Men live in anxiety and over-work, under the pressure of ostentation, to die of premature exhaustion. Such of them as are forced by their business into the open air, live longer, but it is a life growing more and more like the feverish state of existence that marks the American character, a life that lessens laughter, and increases—not thought—but cunning. Such a man's family, whether in England or the States, are less his connections than his property, to be managed by others, like an outlying farm. He goes to his business in the morning after a solitary breakfast without appetite; returns to a stimulating dinner, sleeps, or drinks wine and takes coffee in company, and goes to bed, to follow the same routine next day. His children he hardly knows, save by their names, and what he is told of them by the mother, who gets her information from the governess or tutor, or the boarding school. Nor is the condition of the mother better. She is married, not mated; she has a life apart, in languid inability, taking an airing in a carriage, and going through a daily routine, according to fashion, without regard to the aptitude of any faculty she may possess. Even the coarser nature of Queen Elizabeth's steak-and-ale breakfasting and 5 a.m. stag-hunting maids of honour, was better than this. Men could grow out of them with at least physical stamina, like children of Boadicea.

Whatever be the cause, there is a strong resemblance between the wealthy young women of England and the young women of New England. Tall, slender, and with exquisitely chiselled faces, alive with intellect and trembling with nervous emotion, but not nervous energy, narrow-chested and hooped up in stays—to supply by mechanism what nature has denied them; long taper fingers, growing as it were into twigs, like a mythological transformation; feet like anything but those with which "swift Camilla scoured the plain;" not women in the perfect sense of the term, but animated works of art; the ornaments of drawing-rooms, but not the companions of men—it is not marvellous that energetic men should sometimes say in their coarser moments—

"I will take some savage woman;
She shall run my dusky race."

It is only when the high moral purpose is united to the clear and active intellect, that a loving nature of strong energies can sympathise with inherited feebleness of constitution, whether man or woman.

Why this plague spot has grown amongst us, and by what processes it may be removed, are things worth enquiring into. That it is not a necessity is evinced by many examples to the contrary. The stately figure of the Duchess of Sutherland might be taken by a painter to give verisimilitude to the ear of Boadicea, or as the helpmate and partner of a Northman Chieftain in the rule of a warrior tribe, or as the Scottish heroine making a bolt of her arm to close the door on entering ruffianry. It is not all physical force that we want, but so much of it as will give a fitting residence to the noble soul; so much of it as will serve the generous purposes of an emotional heart, and not be an impediment to it. So much of it as will constitute woman man's mutual help-

mate and not man's impediment; so much of it as will promote the growth of strong sympathies and not of weak selfishness. It is vigorous and perfect health that gives the charm to life, that brings forth into full relief all the higher and nobler qualities; and for the earnest duties of modern life, it is as much needed as it was in the elder time by a spear-wielding Britomart, or Thalestris, or Penthesilea.

We may assume that all disease arises from misusage of the body, and there is no doubt that in modern times the body is in many ways better used than it formerly was, but there is one prominent distinction. Amongst barbarous tribes, the weakly-born died off or were abandoned to die; in modern times, art preserves the lives of the weakly, and they live to swell the population and multiply the population who formerly would have died. Thus a race of weakly people is kept up.

The same, or similar processes that save them from dying—care and study—could improve their constitutions. The thorough exercise of all the muscles of the body by physical exertion, and the ample inhalation of pure air, are the essentials of health without which digestion and assimilation cannot go on. Without pure air, scrofula will prevail externally or internally, and, if the latter, will probably be fatal. Without exercise the digestion becomes sluggish, the circulation becomes slow, the feculent matter is absorbed by the blood, and acts on the brain, inducing paralysis.

Ennui and vapours were the disorders of fashionable women in the last generations. In this generation they have widely extended to other classes, under the name of nervous disorders. The household duties which, as Cobbett said, "made the signs of labour glisten on their brows," have disappeared; machinery, domestic service, and diminished drudgery, the tradesman baker, the tradeswoman laundress, and the chemist substituted for the still-room, the cooks trained by books, have eaten up the employments that formerly gave healthy appetite. That the employments have gone is not a matter for regret, albeit there be men who think women born for no nobler end than to make "puddings and pies." But it is a matter of great regret that other employments and exercises have not been substituted for them.

Till women understand this generally we can have no hope. Without sensible as well as amiable mothers, we cannot have manly or womanly children. Till families shall become domestic, and put away the ostentatious for the natural, we can have little amendment. While boys and girls are sent to school to be out of the way of their fathers, mothers, and elders, the affections which should shield them from vices cannot grow up. Till mothers shall feel a pleasure in being surrounded by their offsprings, and making themselves a part of their pursuits, cultivating the moral feelings that are not fashionable accomplishments, and form at present little part of what is called education, really happy society cannot exist. But unless all this can be made pleasurable, mere exhortation can have no effect.

Society is the thing most people aim at. Desire of society, even more than intellectual or sensuous gratification, attracts them to morning and evening concerts, to dinners, to theatres, and to operas. The question, then, is how to combine this society-seeking with healthy exercise. There is no other way but by making exercise an enjoyment. Women and children can only be made robust by exercise, not taken with elegant languor in a carriage, not a walk, which exercises only the lower limbs, at a slow pace, inducing fever, but thorough vigorous movement of the whole muscles,

"With laughter holding both his sides,"

inducing perspiration and the subsequent use of the bath.

There is no difference, save in degree, between men, women or children in the matter of exercise, and there is nothing indelicate in woman practising all the exercises

of men. There is no reason why they should not row in boats as well as Grace Darling or Scott's Lady of the Lake, for a proper construction of oar would obviate the hardening of the hands. There is no reason why they should not swim, why they should not ride elsewhere than in the parks, why they should not play cricket, or fives, or tennis, as well as use the shuttlecock and the hoop—two of the healthiest as well as the simplest of games, expanding the chest, improving the breathing, and bringing all the muscles into action. At schools girls are taught music and callisthenics, which they leave off, and practice no more when they leave school, and most married women would think themselves eternally disgraced if found playing with a hoop, even though the hoop were a substitute for swallowing daily drugs.

Society, then,—society in which mothers could lead forth their children to healthy physical sports, as a substitute for boarding-schools—society in which the animal spirits could have full scope—is one of the things that are needed; sports in which young and old might join to the full extent of their capacities, "and no men make them afraid."

This cannot well exist as dwellings are at present constructed, but there seems no practical reason why there should not exist clubs for families as well as for the fathers of families. Not the expensive erections of Pall Mall, and St. James's-street, but buildings of large area, with glass roofs capable of being thrown open to the air, cheaply erected, and capable of extension to any size, as the demand might grow. With such places of meeting the barriers of form would break down, natural forms of dress would replace artificial, health would grow, and simple food would be eaten with healthy appetite, the craving for night parties would lessen, and refreshing sleep would be induced at wholesome hours. Improper people could be kept out as they are at other clubs, and the freedom which prevails in seaside life could be kept up for the whole year without the disadvantages.

In Eastern countries women and children meet at the bath, which is their club, their *conversazione*, their refuge from the intense weariness of their in-door life. A gymnastic club, a reproduction, in another form, of the groves of Academus, suited to our varying climate, would be much more than an Eastern bath to them. And this is one of the purposes to which the Crystal Palace might have been turned had it been within reach, had it been constructed at a moderate cost. For such a purpose we need height, but not enormous height; we need space and cover on the natural surface of the ground; we desire the greenhouse, but not the hothouse; we desire objects of beauty, but not the recondite articles of the museum. We desire swimming-baths, with abundant water, moderate warmth, and abundant ventilation; we desire every kind of sport, and game, and exercise that may best aid in developing the wonderful powers of the human body; we desire libraries in such a place, to add to the pleasure of after repose.

There is no doubt that thus, at a comparatively small cost, English wives and children might obtain healthy social recreation that would appease the craving for mere excitement, and strengthen the system instead of weakening it. The "Sister of Charity" system embodied in Miss Nightingale, is evidence of the craving of wealthy women for better things.

Paris is a place of resort because it has a great number of open-air days throughout the year. With a glass cover to open and close at pleasure, London might be more than an equivalent to Paris. It is not the garden of Epicurus in the gross sense that we need, but the kind of building that will put us on a level with what are called fine climates, and allow us at home to indulge in healthy social intercourse the year round.

It is possible by such a system to carry forward the work of saving weakly infant life to the further stage of making the after life an enjoying one. It is possible to bring up a race—to be the mothers of another generation

—that shall put into the shade the present, that shall make the physician the preventer rather than the curer of disease.

We have had many gymnastic establishments for men pursued with arduous for a time, and then abandoned. There are two reasons for this. The weather closes them one half the year; and they are pursued rather as hygienic business than as a recreation amongst their friends. Women and children in this country have leisure, and could pass the entire day together had they only a fitting meeting place. And professors and classes for education would follow as a natural consequence. Such places would become the schools for women—women, such as those high poets dream of—women with heroic souls, with acute intellect, beaming faces, symmetric forms, and strong healthy frames; women fitted to bring forth a race of heroes, and bring them up to manhood's best attributes.

Many will scoff, and call this dreaming; yet it is but applying obvious means to obvious ends. Other things being equal, those reared in strength will be strong, and those reared in weakness, weak. The ruffian comes forth from the abodes of squalor, the rat from the drain, the sybarite from slothful luxury, the heroine from good birth and wise training.

The possessors of the funds of the Great Exhibition have purchased a large plot of land, whereon they purpose to erect galleries and museums, as means of public instruction. Are they willing to go yet further, and set apart a piece of the land whereon to erect an Academy and Gymnasium? a building perfect in its kind, and filled with all appliances for training a sample band of the future mothers of the community, under the auspices of a Maurice and a Kingsley,—a college for women in the best sense of the word, in order to test experimentally whether the Jane Greys, and the Russells, and the Nightingales, may not become the staple as well as the examples of English womanhood.

Quite as worthy a thing is it to do this as to found a College for Working Men.

I am, Sir, yours faithfully,
W. BRIDGES ADAMS.

MIDDLE-CLASS EDUCATION.

Bruton-street, Nov. 5, 1855.

MY DEAR SIR,—I beg to enclose a copy of the Memorandum which I read at the October meeting of the Council of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce.

The paper, as you will see by the extract from the Minutes, was most courteously received by a numerous meeting of the Council, comprising, I am happy to say, a very good proportion of tenant farmers; and five of the Council at once most handsomely formed themselves into a committee to assist in carrying out the scheme, of which the Memorandum had described to them the leading features.

Before referring you, however, to that Memorandum, I may be permitted to say, that I address you publicly on this present occasion, not only as being the Chairman of the Council of the Society of Arts, and thus, so to speak, to form one person officially representing the unanimous feeling of the whole Society and all its affiliated branches, in favour of education, but also as having long been yourself individually a zealous and effective labourer in the cause of education, and not only a strenuous promoter of educational improvement generally,—but also, and more especially as a most thoughtful and earnest promoter of an improved middle-class education,—as having taken a principal part in framing the "Report on Industrial Education" of 1853, and since in organising a Trade School in your parish of Wandsworth; I have, therefore, the best grounds for my conviction that neither officially nor as a private individual, will you regard with indifference

our humble efforts in Devonshire for the encouragement of education and self-culture among farmers' sons.

The object seems to be one deserving of more attention than it has yet received; and without repeating what I have before said upon it in the pages of the *Journal*, I would now again earnestly commend it to the consideration and sympathy of every member of the Society, and of all its affiliated branches, whether in town or country. For these are not times in which England can afford to have class jealousies entertained, or exclusive class interests pursued by her children.

I remain, my dear Sir, with great truth, yours sincerely,
EBRINGTON.

The Rev. Dr. Booth,
Chairman of the Council of the Society of Arts.

Memorandum on Middle Class Education, by Lord Ebrington, in reference to his prize of £20 for the Sons and Relatives of Devonshire Farmers.

Having already repeatedly made public, both in writing* and by word of mouth, my impression as to the extent and causes of the relative deficiency of the means of education for the middle classes in general and for the farmers in particular, I need not here go into the whole question again. Nor need I repeat how sincerely anxious I feel that farmers and farming should keep pace with the progress of other classes and other arts. I will observe, however, that if things go on as they do now, I augur more favourably for some time to come of the professional than of the social prospects of the farmers. And for this reason. Though, on the one hand, I am convinced, from the decided advance which agriculture, like all other arts, has latterly been making, that a combination of science with practice, and an acquaintance with the experience of a wide circle of agriculturists, attainable only by the well-educated, will become gradually more and more indispensable to profitable farming; yet, on the other hand, the more I see of farming and farmers, the more sensible I become of the very great amount of valuable practical knowledge they, for the most part, have of their particular business. And though highly-educated gentlemen, on the strength of the really fuller knowledge they have derived on certain agricultural points from their wider range of reading, reflection, and travels, sometimes flatter themselves they can give regular farmers general lessons in their trade; yet the more I am able to learn of the comparative pecuniary results of professional and of amateur farming in general, the more highly I am inclined to rate the regular farmer's superiority in whole branches—and those among the most important—of that business. This, however, makes me only regret the more that, for want of some additional education, so many good farmers and sensible men should, to so great an extent, be restrained from advancing agriculture by the freer communication of their knowledge to others, and from more usefully serving the public in various capacities; and should thus be prevented from doing more justice to themselves in the eyes of the community.

My object in offering the present prize is not merely to give young farmers an incentive to exertion, but also to endeavour to ascertain (with a view to its amendment, if necessary) the means of education at present practically available for that class in Devonshire. I mean of general education, as distinguished from business training. I cannot believe that in the present day any ascertained deficiency will long be allowed to continue in this country without some effort being made to supply it, more especially if the class affected be one so powerful and so capable of manfully overcoming difficulties as the agricultural body has recently shown itself to be. In the present

* See my letter to Mr. Chester of June 28th, 1854, in the *Journal of the Society of Arts*; my speeches at the Conference of the Society of Arts in July, 1854, at the Tiverton dinner last June, and again at the North Molton and Castle Hill dinners this month, &c.

instance this accurate knowledge is the more essential, because we have some reason to believe, not only that more has latterly been done for improving the education of the classes both above and below the farmers than for them; but also that the present generation of farmers find, with regard to the education of their children, some disadvantages which their predecessors did not before the days of Government grants, when such local schools as existed were, for the most part, self-supporting. As it is to the masters of the surviving schools of this class that we shall be mainly indebted for the preparation of the candidates that may present themselves, so it is to them also that we must chiefly look for information on this subject. In this investigation none can be more interested than these teachers. And I would put it to all able and earnest masters of middle class schools whether they have not experienced the want of some impartial and recognised standard in their too often unequal competition with unscrupulous pretenders to the honourable office and title of preceptors. I would ask them to consider whether the institution of some public test of their pupils' proficiency would not, while encouraging those pupils to increased exertions and longer stay at school, at the same time supply to their establishments an evidence of due qualification or certificate of excellence such as the examinations for University degrees and honours have long furnished to the schools of the higher classes—and have furnished, I will venture to say, with great advantage to them all; but more especially to those which, though some of them simply grammar-schools by their foundation, have, thanks very much to these examinations, won a world-wide distinction as the Public Schools of England.

The establishment of special examinations to test qualifications with a view to the selection of the right men for the right places, is becoming one of the questions of the day. Witness the examinations recently set on foot for the Indian service by the Indian Government; for the Engineers and Artillery service by the War Department; for lawyers by the Inns of Court; and last, not least, those projected for our civil service by the late Government. But it is to be observed, that as yet the more general character of University education does not appear by the results to have at all unfitted University men for distinguishing themselves in these more technical and special examinations; nor does the value of academical distinctions appear to have been at all depreciated by the lucrative prizes held out at these newly-instituted contests.

It has yet to be proved whether the establishment of something like a standard of middle-class education, by means of some examinations analagous to those of our Universities, would not prepare the way for, instead of obstructing, and be assisted, instead of obscured by, any subsequent trials of more technical or professional qualifications. I believe this to be a desideratum much wanted. Whether it can be supplied remains to be seen. The Society of Arts, by the examinations it has lately instituted, has made a vigorous effort to do so. As I stated in my letter to Mr. Chester, the Society's comprehensive character, its more than centenary existence, its ties of affiliation with almost every town in England, and the countenance of its Royal President and distinguished Vice-Presidents, afford it great advantages for this work. We shall see by the result of next year's examinations whether the Society has hold enough upon the nation at large to succeed in its object. I hope it has. I fear, however, it certainly has not upon the rural part of the population; and it is in them I, as a country gentleman, must feel the deepest interest.

I have heard it indeed suggested that the Universities might at once strengthen their hold upon the country and render great public service by undertaking this task, but they are at present, and must continue for some time, too much engaged in the work of internal reform to admit of our reasonably expecting this of them. Whether Government examinations, and the certificates to be obtained at them, could ever supply the desideratum, is a question,

even supposing Government patronage to be distributed among the successful competitors at examinations for different kinds of Government employment, instead of, as heretofore, almost entirely among political partisans. But one disadvantage would attach to the Government's being regarded as the chief, if not the sole source of educational distinction for the middle classes. I mean the encouragement liable to be thus given, unless great care be taken, to the growth of a body of highly-educated place-expectants; unhappy and unquiet, because looking exclusively to general literary attainments, instead of to special qualifications, as their claim for employment, and still continuing to do so after reaching the age when men, as a rule, should be branching off, if I may so speak, from the general highway of youth into the different byways leading to the several fields of their respective adult employments.

It was under these impressions that, before making trial of the Society of Arts, I was led to think of the plan of county honours and county degrees mentioned in my letter to Mr. Chester. As this obviously, however, could not be carried into effect without larger and more influential co-operation than I had any right to expect for any project of mine, I determined to take the step which the Council were so kind as to honour with a vote of approval when I mentioned it to them at Tiverton. Having said thus much to put the Council fully in possession of my views, and to secure those views, as far as may be, from misconception, I will proceed to the details of my scheme.

(1.) With regard to the candidates for the prize, my own idea is that they should be young men *bona fide* engaged in agriculture, the sons or relatives of Devonshire farmers (whether freeholders or tenants), mainly depending for their incomes upon the pursuit of agriculture.

If occasion should arise for a more stringent definition in this respect, the £50 franchise would perhaps the more fairly indicate the minimum for renting farmers, because it is with their educational qualifications for their position as Englishmen of the middle class, and for their duties as citizens of a free country, that we are here concerned, rather than with their technical or professional knowledge as persons engaged in the business of farming. The standard adopted for tenant-farmers would furnish a sufficient basis for determining the limitations in the cases of freeholders or copyholders. It seems unnecessary to fix a maximum; as the Committee would practically, I believe, find no difficulty in deciding whether or not any one offering himself as a candidate was or was not, from present position in society, or from past advantages of first rate school or college education, so far above the standard of the class I seek to benefit as to be an unfair competitor for the others to have to encounter.

(2.) The object of limiting the age of candidates to 18 and 23 inclusive, is simply to insure their having all fairly committed themselves to the pursuit of agriculture, and being so far removed from boyhood as not to repel from competition those just arrived at manhood, and already entering upon the business of life. But as I have announced my intention of offering the same prize for three years in succession, those who are yet rather too young to come forward as candidates, may look to doing so hereafter, and begin forthwith to prepare themselves accordingly.

(3.) I will refer to my often cited letter to Mr. Chester for the reasons which lead me to require from the candidates certificates of competent Scriptural knowledge as a necessary part of an Englishman's acquirements, on grounds not religious only, with reference to a future world, but also purely secular, with reference to the world that now is, to society as at present constituted in England, to our English laws and English institutions.

(4.) With regard to the subjects of examination, they have this year been purposely limited to three, viz., the English Language, the History and Geography of the British Empire, and Practical Mathematics—some acquaintance with all of which is undeniably required by

every Englishman of the middle class who can be considered educated up to the standard of his position.

(5.) With regard to the points chiefly to be aimed at in examining upon these subjects, I have conferred with the three gentlemen who have so kindly undertaken the laborious duty of conducting the examinations, and I am happy to find a general concurrence between their views and mine.

(a.) The knowledge of the English language I seek to test and elicit relates not so much to correct grammar, though that of course is implied, as to some acquaintance with the force and value of words, and the power of faithfully representing thoughts and things in language; that is, of expressing what is meant, so as to convey within a reasonable compass neither more nor less than the sense intended to be conveyed. Mere grammar, the dry bones, so to speak, of the language, cannot of itself perform this higher, and, as it were, vital function. Indeed, if there must be a deficiency in either one or the other, it had far better be in grammar than in expression.

No one who has not the command of a vocabulary sufficiently full and appropriate upon any given subject can without undue prolixity make himself thoroughly understood about it; or speak or write effectively, even if he can himself think accurately, upon it, which, since words are thoughts, is in many cases far from easy. On the other hand the employment of exaggerated language in the attempt at oratory or fine writing, while it is far more repugnant to good taste than the want of point and precision, resulting from a defective vocabulary, for the same reason tends to convey impressions at least equally inaccurate. But every one must have heard and read much that was more or less incorrect in grammar, and yet perfectly intelligible and to the point, often very graphic and sometimes even eloquent. This classical scholars well know from occasional examples in the best authors. Still, even were it otherwise, the practical character of the classes here in question require that their education should deal with substance in preference to form.

(b.) The History and Geography of the British Empire may, I think, be well taken together, as they happen in the case of our particular country to be so closely connected with each other.

What I should especially seek here in the candidates would be a fair acquaintance with the outline of the History of the Empire, of its principal events, particularly of its wars and conquests, or discoveries, and, in connexion with these, of the course of its colonization. To this, as of not less importance, especially for men engaged in the business of raising food for the population, I should add a good general idea of the character, products, and resources of the United Kingdom, and of those numerous colonies and dependencies which together make up the British Empire.

The consideration of the History and Geography of that mighty Empire in this point of view seems to me better calculated to kindle sentiments of pure and undivided patriotism in Englishmen, than would be the study, to an equal extent, of the History of the English people, of the growth and development of our social organization and political institutions; because such a study necessarily brings men into contact with party and controversial questions still debated at the present day. Moreover, the study without which a real knowledge of our history viewed in the latter aspect is not to be acquired, must be far deeper and more systematic, and demands powers of philosophical reflection hardly to be attained without longer and severer mental training than it is reasonable to pre-suppose in the candidates to whom I offer my prize.

(c.) With regard to the third subject, viz., Practical Mathematics, what ought to be required would seem to be a thorough knowledge of the earlier rules of arithmetic, and of the first principles of the mechanical powers, of bookkeeping, and of mensuration. I say of the principles, because it is far more important to have a thorough

understanding of principles than a familiarity with those convenient formularies which, though invaluable in the daily business of life, cannot of themselves enable any man to deal with new and unexpected cases; and, if merely learnt by rote, give none of the valuable mental training furnished by the process of thoroughly mastering any subject.

In conclusion I will only add how anxious I am that the three examiners* should be relieved from all trouble about this matter not inherent in the nature of their duty; and, indeed, it would seem on every account desirable that a Committee should take off their hands any questions that may arise as to the admission of persons proposing to present themselves as candidates, &c. I would therefore venture to ask the Council to designate some Devonshire members of the Bath and West of England Society,† whose assistance I might solicit for this purpose with the high sanction of the Council.

Extract from the Minutes of the October Meeting of the Council of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce. Established 1777.

After some remarks upon the above statement of his Lordship, it was proposed by Mr. T. D. Acland, and seconded by Mr. A. H. D. Troyte:—

“That the Council beg to thank Lord Ebrington for communicating to them the arrangements which he proposes to make for awarding the prize which he has offered to the sons and relatives of farmers in Devonshire, and to assure him that whatever tends to promote so desirable an object cannot fail to be a matter of interest to them.”

It was proposed by Mr. Acland, and seconded by Mr. Dymond:—

“That the Council understanding that his Lordship does not propose to make the Society responsible for the details of the proposed examinations, are happy to learn that there is reason to believe that some active members of this Society are prepared to co-operate with his Lordship in carrying out the proposed plan.”

Both resolutions were carried *nem. con.*

Proceedings of Institutions.

CARLISLE.—A *soirée* in connection with the Church of England Religious and General Literary Association was given on the evening of the 30th ult. The Assembly Room of the Athenæum was gaily decorated for the occasion. After tea, during which the band of the Royal Anglesey Militia and the Choir of the Cathedral, played and sang, the Very Rev. the DEAN of CARLISLE rose to address the meeting. After remarking on the double title of the Institution, and explaining by that means its object and character, he proceeded to observe that these Institutions held with regard to the mass of the community at large, the same position which was held by the universities with regard to the members of the learned professions. A boy might learn a great deal more himself after he left school by cultivating his taste for reading than the schoolmaster taught him. And an institution of that kind would enable him to carry on his education till he arrived at the maturity of life. He thought it would fare very ill with the members of the manufacturing community if their whole education were to terminate when they left school. And here he would say in all

* Sir Stafford Northcote, Bart., M.P.; the Rev. Chancellor Martin; R. Dymond, Esq., C.E., who most kindly undertook, at my request, to conduct the first examination next Easter.

† The following members of the Council: Mr. Sillifant, of Coombe; Mr. Thomas Hussey, of Waybrooke; Mr. Farrant, of Growing; Mr. Fry, of Culmstock; and Mr. Widdicombe, of Nyborough; most kindly undertook to act as a Committee in compliance with this request.

seriousness—for it was a melancholy fact, seeing that there was so much talk on the subject of education, seeing that they had an inspector, seeing that no session of Parliament passed without many debates on the subject, and seeing that the word was in every man's mouth—that there was such a vast multitude of persons who did nothing whatever for the cause of education. He did not think that they should have a school-rate by authority—and for the present, at least, it had been put aside—but one among themselves, rendering it unnecessary for the Imperial Parliament to lay a rate upon them. The Rev. W. M. SCHNIBBEN then addressed the meeting at considerable length on “The Advantages to be derived from Lectures.” While he admitted that the same amount of information was not to be obtained from listening to popular lectures as from study, he contended that every man was not disposed, after leaving his hard day's toil, to take up a book and go into a severe study. Under these circumstances the lecturer would be willingly listened to with advantage for an hour or so, and a rational evening's amusement might thus be obtained. The Rev. G. R. MONCRIEFF, Her Majesty's Inspector of Schools in the Northern District, next spoke upon the subject of education. He pointed out the advantage of sound elementary education, and said he had no doubt that ere long the whole of the different branches of education and the duties of self-improvement would be converted into an admirable and gigantic system. Mr. JAMES BARNES, the secretary to the Association, then gave some information in reference to its working. At the end of the first year there were only 170 members, but at the end of the fourth they had 225 members. In 1852 their income was £88 16s. 6d.; and in 1855 it was £108 3s. 0d. Although the subscriptions had increased, it must likewise be borne in mind that the liabilities had increased, so much so indeed, that for the last three years they had had their balance, he felt sorry to say, on the wrong side of the sheet.

CHOYDON.—It is gratifying to state that the Literary and Scientific Institution is at present in a more flourishing condition than it has been for many years past, and that the debt, which had so long paralyzed the efforts of the committee, is almost cleared off. This is, in a great measure, to be attributed to the judicious course adopted by the management, in enlarging the society's sphere of usefulness by means of lectures, and various important improvements to the library and reading-room. It should be observed that during the past year none but lecturers of acknowledged talent have been engaged, and although this has not been accomplished without great expense, yet, in the end, the society's finances have much improved, and a far higher character has been given to the Institution itself. A numerous party of members visited the Paris Exhibition lately, and the gentlemen forming it, have presented the secretary with a very chaste and elegant silver inkstand, bearing the following inscription:—“Presented to S. L. Rymer, Esq., by the gentlemen who visited the Paris Exhibition with him in September, 1855, in remembrance of his courtesy and kindness to them on that occasion.” The winter course of lectures has just been inaugurated with success, by an entertainment on the Patriotic Songs of England, given by Mr. Henry Phillips. It is to be hoped that the present state of things will not only continue but improve, and that ere long the permanent stability of the Institution may be fully established.

PORTSEA.—On Wednesday week the annual re-union of the members of the Watt Institute took place in the Reading Room, and a tea meeting was held on that occasion in aid of the fund to increase the library. There was a very full meeting. Mr. MAXWELL, treasurer, was in the chair, and, in addressing the meeting, stated that the affairs of the Institute were in a favourable position, being unincumbered, and signs of an increase of members. The library contained upwards of 750 volumes, and the circulation had been very large during the past year. The

pupils of the Elocution Class next proceeded to show the progress they had made in their studies; many select and pleasing recitations were given, interspersed with a variety of glees, sung by Messrs. Fuller and Stapleton, who kindly volunteered their services for the occasion. Mr. Williams, teacher of the flutina, performed several airs on that instrument, with great credit; and a band also added to the evening's amusement.

PRESTON.—The twenty-seventh annual meeting of the Institution for the Diffusion of Knowledge was held in the theatre of the Institution on Tuesday, the 2nd of October, Thomas Walmsley, Esq., president, in the chair. From the report it appears that there has been an increase among the quarterly members, but a decrease in the number of annual subscribers. The latter class were last year 236, this year 221. The quarterly were last year 335, this year 346. The total number in each year being 571 and 567. The report then proceeds to observe that, “the negotiations so long pending with the Department of Science and Art of Her Majesty's Privy Council for Trade—in reference to the establishment of a School of Design in the Institution—have been terminated without arriving at the successful result so earnestly hoped for,” as it was found “that a school established under the auspices of the Board of Trade, would not only require a very considerable sum to be drawn from, or charged to, the funds of the Institution for outfit, and also the entire and exclusive use of the Exhibition Gallery; but that it must be to all intents, and in all its purposes, a public school, in which the members of the Institution would scarcely, if at all, have any priority of privilege.” By the proceeds of the Exhibition of Works of Art, 1854, and the results of a subscription set on foot at the last annual meeting, the building has been freed from debt—though some portions of it are still incomplete. From the improved state of the funds, however, the committee have felt justified in entering into contracts for its completion. To Mr. Birchall, the president of 1850, and of 1853-54, the gratitude of the members is due for providing means to render the building at first habitable, and for his various subsequent sacrifices. 257 books have been added to the library during the year, 222 by purchase and 35 by donation. The library now contains 5,795 volumes. Thirteen lectures were delivered, all gratuitously, during the session. The members' Class Committee, referred to as under trial in the report of the last annual meeting, have continued their operations, and educationally, it is hoped, with some degree of success. “The largest average attendance appears to have been in the Vocal Music Class, namely, 18, by last report, 13; in the French Male and Female Classes, each 18, by last report, Female only, 10; in the Architectural Drawing Class, 13, by last report, 6; in the Mathematical Class, 11, by last report, 10; in the Phonetic Short Hand Class, 9, by last report, 6; in the Literary and Elocution Class, last report (not previously mentioned) 8; in the Botanical Class, last report, 8. No other class is reported to have numbered more than six.” The News Room has experienced a diminution of members during the last two quarters of the year. The *soirée* held in November last, produced a sum of £16 19s. 11½d., besides adding considerably to the permanent stock of the Institution.

STAMFORD.—The seventeenth annual meeting of the Institution was held on the 16th ult., J. T. English, Esq., president, in the chair. The one subject of regret to the committee is, that, owing to the purchase of philosophical apparatus (under circumstances eventually beneficial to the Institution), and to unpaid bills neglected to be sent in prior to the close of last year, they are again compelled to postpone the payment of interest upon the building debt. Their causes of satisfaction are, the large increase in the number of members, both annual and quarterly, now amounting to nearly 300; the greatly increased number of books in circulation, being nearly threefold, or 2,020 volumes issued, against 740 in the previous year; and the uniform good condition in which

the books have been returned, which completely justifies the additional privileges of the quarterly members, to whom the news room has also been thrown open, without the additional subscription of 10s. previously made. The museum has been enriched by the addition, among other things, of a very valuable mineralogical and local geological collections, brought together with much labour and expense by Mr. J. F. Bentley, the late secretary, who has in consequence been made a life member. It is believed that the specimens in this and the Natural History Department, will bear comparison in number and excellence with those of any local museum in the kingdom. The philosophical apparatus, before referred to, has been purchased of the late secretary, by whom it had been chiefly obtained and used as a means of instruction at the Class and Juvenile Lectures given by him during the period of his office. Eight lectures and readings, five paid and three gratuitous, were delivered during the past year, to all of which the members had free admission, and, frequently, tickets for the admission of one or two friends.

Miscellaneous.

ADOPTION OF THE PUBLIC LIBRARIES ACT IN HERTFORD—On Wednesday evening a meeting of the burgesses of Hertford was held at the Shire Hall, for the purpose of determining whether the Public Libraries Act of 1855 should be adopted in the borough. The chair was taken by the Mayor, and amongst those present were, the Right Hon. William Cowper, M.P., most of the town councillors, and a large number of the leading residents of the district. The result of the proceedings was a resolution, unanimously passed, for the adoption of the act.—*Hertford Mercury*.

MEETINGS FOR THE ENSUING WEEK.

- MON.** Geographical, 8½. 1. Sir Roderick I. Murchison, "Report upon the completion and erection of the Bellot Monument on the quay of Greenwich Hospital." 2. Dr. Frederick Muller, "Account of a journey to the Australian Alps; with note from Captain Sturt, F.R.G.S., announcing the departure of the North Australian Expedition under Mr. Gregory." 3. Letters from Dr. Livingston, in Africa, accompanied by a new Map of the Interior.
- TUES.** Civil Engineers, 8. Mr. G. Herbert, "On the Construction of Stationary Floating Bodies."
- WED.** Literary Fund, 3. Royal Soc. Literature, 4½. Ethnological, 8½.
- THURS.** Antiquaries, 8.
- SAT.** Medical, 8.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette November 2nd, 1855.]

- Dated 26th July, 1855.*
1693. C. Schiele, Oldham—Motive power.
- Dated 31st July, 1855.*
1737. G. J. Dalman, Alfred-villas, Kingsland—Earthenware glazes. (A communication.)
- Dated 23rd August, 1855.*
1911. W. L. Thomas, Chapel-place—Projectiles.
- Dated 25th August, 1855.*
1931. H. Le Francois, Vauxhall—Cleaning stewpans, &c.
- Dated 24th September, 1855.*
2127. D. Chalmers, Manchester—Cutting pile of woven fabrics.
2129. J. Beattie, 11, Lawn-place, South Lambeth—Furnaces.
2131. H. J. Harcourt, Birmingham—Bell cranks and furniture.
2133. G. R. Hudson, 120, London-wall—Coffee pot. (A communication.)
2135. A. V. Newton, 66, Chancery-lane—Casting solid and hollow articles in metal. (A communication.)
- Dated 25th September, 1855.*
2137. J. L. Gardner, Providence-street, Walworth—Buttons.
2139. J. C. Clive, Birmingham—Photography.
2141. E. Laport, Paris—Candles.
2143. J. Roberts, Upnor, near Rochester—Cements.
- Dated 26th September, 1855.*
2145. R. Crankshaw, Blackburn—Preparing warps for weaving.

2147. F. Bouchet, Paris—Moving submerged bodies.
2149. M. W. Hilles, Percy-street, Bedford-square—Rack for window-blinds.

Dated 27th September, 1855.

2151. H. Hughes, Loughborough—Compensating for wear of machinery subject to rectilinear motion.
2153. A. E. Guilbert and C. L. Guillemère, Paris—Bridle
2155. F. X. Poignaud, Paris—Wedges and keys. (A communication.)
2157. C. F. Thery, London—New preparation of coffee.

Dated 28th September, 1855.

2159. T. Dyke, Long Newton, near Darlington—Grass cutting machines.
2161. W. D. Gray, 1, Clifton-road, Old Kent-road—Instrument for showing the course or direction and distance run by a ship at sea.
2163. R. L. Johnson, Dublin—Gas from peat, &c.
2167. E. D. Thomson, Duke-street, St. James's—Steam boiler furnaces.

Dated 29th September, 1855.

2169. G. Adamson, Edinburgh—Travelling crane.
2171. J. Mitchell, Sheffield—Railway buffers and draw springs.
2173. D. Chadwick, Salford, and H. Frost, G. Hanson, and J. Chadwick, Manchester—Water and gas meters, and motive power engine.
2175. J. Beattie, 11, Lawn-place, South Lambeth—Railway wheels and axles.

Dated 1st October, 1855.

2177. J. Gedge, 4, Wellington-street-south, Strand—Gas meters. (A communication.)
2179. W. Illingworth, Manchester—Printing ceramic manufactures.
2180. C. Radcliffe, Sowerby-bridge—Damping textile fabrics for finishing.
2181. A. E. L. Bellford, 32, Essex-street, Strand—Ventilating hats. (A communication.)
2183. J. Mitchell, Dunning's-alley, Bishopsgate-street-without—Apparatus for washing ores, &c.
2185. J. H. Denning, New York—Projectiles. (A communication.)
2187. G. Baker, 149, High-street, and C. Miller, Flying Horse-yard, Southwark—Register stoves.
2189. Capt. F. Uchatius, Vienna—Manufacturing cast steel.
2191. J. R., R., and J. Musgrave, Belfast—Stoves.

Dated 2nd October, 1855.

2193. J. Chadwick, Charlesworth, near Glossop—Carding machinery.
2195. G. Rennie, Holland-street, Blackfriars—Boilers of marine engines.
2199. W. E. Newton, 66, Chancery-lane—Elastic bed-bottoms. (A communication.)
2201. G. T. Bousfield, Sussex-place, Loughborough-road—Locks for firearms. (A communication.)
2203. R. Peyton, Birmingham—Wrought-iron fences and gates.
- Dated 3rd October, 1855.*
2205. T. Greaves, Manchester—Motive power.
2207. R. A. Brooman, 168, Fleet-street—Indicating and regulating height of water in boilers. (A communication.)
2209. R. Wilkinson, Staley-bridge—Carding machinery.

Dated 4th October, 1855.

2211. R. A. Crosse, Bartholomew's-lane—Founding printers' type.
2213. G. F. Gruet, Bordeaux—Lamps.
2215. H. Cornforth, Birmingham—Hooks and eyes.
2217. F. G. and T. R. Sanders, Poole—Pottery, earthenware, &c.
2219. W. Hamilton, St. Helen's-lodge, Hants—Tables, chairs, sofas, &c.
2221. H. Brierly, Chorley—Self-acting mules for spinning.
2223. F. M. Demait, Paris—Preservation of animal and vegetable substances.

Dated 5th October, 1855.

2225. T. Grahame, Lichfield—Floating batteries.
2227. W. Spence, 50, Chancery-lane—Cards for carding cotton, &c. (A communication.)
2229. J. B. Howell, Sheffield—Steel castings.
2231. E. C. Wren, Tottenham-court-road—Child's cot.

Dated 6th October, 1855.

2233. W. J. Roffe, Upper Holloway—Stoves.
2235. B. Hoyle, Pilkington—Dyeing.
2237. J. T. Hester, Oxford—Invalid and children's chairs.
2239. W. Rogers, New-road, Whitechapel-road—Firearms.

Dated 8th October, 1855.

2241. J. Denner, 11, Albion-grove west, Islington—Furnaces.
2243. W. Rothera, Hollins, Lancaster—Bolt, screw, blank, and rivet machinery.
2245. J. H. Johnson, 47, Lincoln's-inn-fields—Rolling iron. (A communication.)
2247. W. E. Newton, 66, Chancery-lane—Condensers. (A communication.)

Dated 9th October, 1855.

2249. P. M. Parsons, Duke-street, Adelphi—Joints of pipes and tubes.
2251. W. C. Jay, Regent-street—Collapsible hat or bonnet. (A communication.)
2253. J. Murdoch, 7, Maple-inn—Extracting colouring matter from lichens. (A communication.)

2255. J. F. Belleville, Paris—Smoke-consuming apparatus.
 2257. W. H. Lancaster, 24, Hatfield-street, and J. Smith, Sefton-street, Liverpool—Consuming smoke.
Dated 10th October, 1855.
 2260. J. Onions, 44, Wellington-place, Blackfriars—Utilising smoke, heated air, and gases from furnace fires.
 2261. J. Gedge, 4, Wellington-street-south, Strand—Card drawings used in manufactories. (A communication.)
 2263. R. W. Pyne, Southwark, and W. Malam, London-road—Gas.
 2265. J. Parry, Lower Broughton, and S. Ivers, Salford—Looms.
 2267. J. A. W., and H. Thornton, Nottingham—Machinery for knitted fabrics.
 2269. W. C. Taylor, 11, Devonshire-road, Greenwich—Marine engines.
Dated 17th October, 1855.
 2328. F. Ayckbourn, 30, Palace New-road, Lambeth—Apparatus for brushing and cleaning boots, shoes, and trowsers.
Dated 18th October, 1855.
 2334. J. Wakefield Birmingham—Machinery for screw blanks, nails, pins, rivets, &c.
 2338. J. Graham, Aughton, Lancaster—Cleaning and dressing grain.
 2340. J. D. M. Stirling, The Larches, near Birmingham—Coating metals.
Dated 19th October, 1855.
 2344. W. Smith, 10, Salisbury-street, Adelphi—Sewing machines. (A communication.)
 2346. J. Elce, Manchester—Self-acting mules.
 2348. N. Smith, Thrapston—Mills.
Dated 20th October, 1855.
 2350. T. Craven and M. Pickles, York—Weaving.
 2352. P. A. H. Parant, Limoges—Millstones.
 2354. T. Valentine and D. Foster, and G. Haworth, Belfast—Power looms.
 2356. H. Gaudibert, Paris—Guard for preventing surreptitious removal of watches, &c., from the person.

WEEKLY LIST OF PATENTS SEALED.

- Sealed November 3rd, 1855.*
 991. William Rowett, Liverpool—Improvements in fitting, handing, and reefing vessels' sails.
 992. John Platt, Oldham, and James Taylor, Hollinwood, near Oldham—Improvements in looms for weaving.
 994. Fielding Fletcher, Birmingham—Improvements in water-closets.
 996. Rodolphe Thiers, Lyons—A machine for manufacturing stretchers of umbrellas and parasols.
 998. Joseph Lacassagne and Rodolphe Thiers, Lyons—An electromagnetic regulator for electric telegraphing, lighting, and electro-motive purposes.
 1000. Daniel Dalton, Chester—Improvements in furnaces for the smelting iron ore and iron stone, and other stones and ores.
 1006. Matthew Butcher and Thomas Henry Newey, Birmingham—Improvements in forge hammers.
 1024. Charles Claude Etienne Minié, Paris—Improvements in muskets or portable fire-arms.
 1026. Daniel Foxwell, Manchester—Improvements in sewing machines.
 1070. George Robinson, Manchester—Improved invalid's bed.
 1102. Thomas Richardson, Leeds—Improvement in dyeing cloth.
 1110. John Knowles and Edward Taylor Bellhouse, Manchester—Improvements in the manufacture or working of marble, stone, glass, and similar materials.
 1113. Thomas Dawson, King's-Arm's-yard—Improvements in cases for containing pen, ink, and stamps.
 1154. Homer Holland, Westfield, Hampden, U.S.—Improvements in the method of treating metalliferous sulphurets.
 1201. Auguste Edouard Loradoux Bellford, 32, Essex-street, Strand—A new apparatus for regulating the speed of steam-engines.
 1209. Joseph Bennett Howell, Sheffield—A new or improved mode or modes of consuming more effectually the gas and gaseous products evolved during the combustion of fuel.
 1214. Auguste Edouard Loradoux Bellford, 32, Essex street, Strand—Improvements in ordnance and in cartridges therefor. (A communication.)
 1468. Denis Daniel Buhler, Paris—Improvements in the construction of fencings.
 1880. André Dubrulle, Lille (Nord)—Improvements in safety lamps.
 1904. Thomas Eyre Wyche, Camberwell—Improvements in propelling vessels.
 2028. Louis Dameron, Paris—Improvements in the construction of carriages.
Sealed November 6th, 1855.
 1023. William Burrill Wilton, Lowestoft—Improvements in furnaces for steam-engines.

1027. Thomas Taylor Lingard, Manchester—Improvements in presses, which improvements are also applicable to raising heavy bodies.
 1074. George Whyatt, Openshaw—Improvements in machinery or apparatus for cutting piled goods or fabrics.
 1112. Wharton Rye, Miles Platting, near Manchester—Improved railway wheel, which may also be employed for other similar purposes.
 1410. Robert Walker and Alexander McKenzie, Glasgow—Improvements in electric telegraphs.
 1714. George Woods, 81, Crown street, Finsbury-square—Improvements in pack saddles.
 1918. Thomas De la Rue, Bunhill-row—Improvement in printing inks.
 PATENTS ON WHICH THE THIRD YEAR'S STAMP DUTY HAS BEEN PAID.
October 26th.
 547. James Henry Smith, Connaught-terrace—Improvements in corsets.
 552. George Hattersley, Sheffield—A radiating hearth-plate.
 780. James Potter, Manchester—Improvements in machinery for spinning cotton and other fibrous substances.
October 27th.
 541. Thomas Wilks Lord, Leeds—Improvements in safety and other lamps.
 556. Charles Arthur Redl, 27A, Davis-street, Berkeley-square—Improvements in telegraphing or communicating signals at sea and otherwise.
 595. Joseph John William Watson, Old Kent-road, and Thomas Slater, St. Pancras—Improvements in galvanic batteries, and in the application of electric currents to the production of electrical illumination and of heat, and in the production of chemical products by the aforesaid improvements in galvanic batteries.

- October 29th.*
 572. Henry Brinsmead, St. Giles in the Wood, Devon—For shaking straw to be attached to thrashing-machines.
 881. Henry Bollmann Condry, Battersea—Improvements in the manufacture of acetic acid and acetates.
 1000. James Lawrence, Westminster—Improvements in the manufacture of projectiles.
 1045. Henry Clayton, Atlas Works, Upper Park-place, Dorset-square—Improvements in the manufacture of bricks.
November 1st.
 856. Richard Dudgeon, New York—Raising heavy weights by means of a portable hydraulic press.
 877. Thomas Ainsley Cook, Walsend—Improvements in bleaching.
November 2nd.
 640. Marc Klotz, 77, Rue Rambuteau, Paris—An improved process and apparatus to be employed in ornamenting fabrics, leather, paper, and other surfaces.
 649. Andrew Lawson Knox, Glasgow—Improvements in the manufacture or production of ornamental fabrics.
 650. James Wotherspoon, Glasgow—Improvements in the manufacture or production of confectionary, and in the machinery, apparatus, or means employed therein.
 665. Robert Booty Cousens, 50, Halliford-street—Improvements in machinery for cutting cork.
 683. Jean Jacques Ziegler, Guebwiller, Haut Rhin, France—Improvements in machinery for preparing to be spun, cotton, wool, silk, silk-waste, flax, tow, and other fibrous substances.
 831. William Edward Newton, 66, Chancery-lane—Improvements in the construction of, and method of applying, brakes to railroad carriages, engines, and tenders, for the purpose of preventing collisions. (A communication.)
 1032. Timothy Morris, Birmingham, and William Johnson, Washwood Heath, near Birmingham—Improvements in depositing alloys of metal.
 2225. William Edward Newton, 66, Chancery-lane—Improved machinery for cutting metal or other substances. (A communication.)
November 3rd.
 656. Admiral the Earl of Dundonald, Belgrave-road—Improving bituminous substances, thereby rendering them available for purposes to which they never heretofore have been successfully applied.
 664. John Arthur Phillips, 8, Upper Stamford-street, Blackfriars—Improvements in purifying tin.
 771. John Thomas Way, Hollis-street, Cavendish-square, and John Manwaring Paine, Farham—Improvements in the manufacture of burned and fire ware.
 955. William Keates, Liverpool—Improvements in fire-boxes for locomotive and other steam-boilers.
 1123. Warren De la Rue, Bunhill-row—Improvements in preparing the surface of paper and cardboard.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietors' Name.	Address.
3777	November 6.	Finlayson's Mechanical Plough Guide ...	James Finlayson	Pendreich, Bridge of Allan.
3778	" 6.	Horizontal Regulating Throttle Valve ...	{ Alexander Hibbs and } William Acton	Sheffield.
3779	" 7.	Portable Nursery Swing	Charles Burton	487, Oxford-street.